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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/841,691	04/24/2001	Angelo Mascarenhas	NREL IR# 99-50	4372

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EXAMINER

JACKSON JR, JEROME

ART UNIT PAPER NUMBER

2815

DATE MAILED: 03/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/841,691

Applicant(s)

MASCARENHAS, ANGELO

Examiner

Jerome Jackson Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2002.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-78 and 80-136 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-28, 50-84 and 106-118 is/are allowed.
- 6) ☒ Claim(s) 1, 29, 30, 33, 34, 39, 40, 85-87, 119, 120 and 132-136 is/are rejected.
- 7) ☒ Claim(s) 31, 32, 35-38, 41-49, 88-105 and 121-131 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6, 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

The amendments to the specification submitted 25 November 2002 are objected to under 37 CFR 1.121 because they do not properly identify where they belong. The pages and line numbers referenced are not the correct places where the changes should occur. The paragraphs of the specification are numbered and applicant should reference the proper paragraphs where the changes should occur. For example, there is no paragraph beginning on page 3 line 12 as applicant has referenced.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1,29,30,33,34,39,40,85-87,136, are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kuznetsov.

The previous rejection still applies. The new limitations "sufficient combination" and "to lower the effective bandgap..." do not structurally distinguish over the prior art which has the same properties. There is no exact magnitude of bandgap lowering claimed which would absolutely structurally distinguish applicant's bandgap lowering over Kuznetsov. Bandgap lowering due to doping occurs in Kuznetsov and is a well known phenomenon. New claim 136 is also rejected because the Bi and N doping in Kuznetsov produces an overlap as claimed and there is no exact magnitude of bandgap modification claimed which would structurally distinguish over Kuznetsov.

Claims 85-87,119,120, and 132-136 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuznetsov with applicant's prior art admissions.

The previous rejection with the above comments applies. As stated above, there is no exact magnitude of bandgap lowering which would unequivocally structurally distinguish the claims over the applied art.

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Claims 31,32,35-38,41-49,88-105,121-131, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 2-28,50-84,106-118 are allowed.


Applicant's arguments filed 11/25/02 have been considered but are not persuasive. Arguments regarding Kuznetsov are not convincing because there is bandgap lowering in Kuznetsov, and as stated above, there is no magnitude of bandgap lowering claimed which would distinguish over the applied art. Applicant argues dopant concentration differences between Kuznetsov and applicant's structure, however, the rejected claims do not recite any particular dopant concentrations and thus do not structurally distinguish over the applied art. Claims 85,119, and 132 are similar to claim 1 in that there is no exact magnitude of doping or bandgap lowering. Arguments regarding these claims are likewise unconvincing.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

  
JEROME JACKSON  
PRIMARY EXAMINER